Nutrition

- It is recommended to ingest between 1.2 and 1.8 grams of protein per kilo of body weight
- A calorie from fat is not the same as a calorie from carbohydrates
    - Within carbohydrates we find different groups: simple (most are found in ultra-processed foods and come from the sugar they contain. They cause insulin spikes, which if we maintain a diet in which we consume simple sugars on a regular basis, in the long run we can suffer a desensitization to insulin (secreted by the pancreas), in case we do not change our eating habits in such a situation we can become diabetic. You can check the GI (glycemic index) of food.
    - Complex carbohydrates are found in whole foods (whole foods) which are digested more slowly and cause a sustained insulin secretion (no spikes)
    - Unlike hydrates, fats (we will always bet on healthy ones) do not cause a remarkable insulin reaction.
- Eat fat. Cholesterol is necessary to produce testosterone.
- Limits / eliminates alcohol, especially beer, as it is highly estrogenic.
- Avoid soy, most of its production is transgenic (from Monsanto seeds). It is one of the foods in which the use of pesticides is highest since it has been designed to withstand it, humans do not. It has a high content of phytic acid (interferes with the absorption of minerals) and phytoestrogens, which act as endocrine disruptors.
- Incorporate intermittent fasting as an hourly guideline at mealtime in your daily life.
    - The time guidelines that we implement must adapt to our lifestyle as much as possible and within the time range that we establish, all this while consuming the necessary calories associated with our current goals. Some of the typical guidelines are 16/8, 20/4 and 23/1. Fasting / feeding hours.
    - Benefits:
        - Increased SIRT3, the protein of youth.

          “Practically of intermittent fasting in humans and its effect on oxidative stress and genes related to aging and metabolism.” ncbi.nlm.nih.gov/pubmed/25546413
        - Reduction of body inflammation. “Interleukin-6 C-reactive protein and biochemical parameters during prolonged intermittent fasting.” archive.is/PHEpe
        - Improvement of neuronal plasticity. “Meal size and frequency affect neuronal plasticity and vulnerability to disease: cellullar and molecular mechanisms.” ncbi.nlm.nih.gov/pubmed/12558961

- Improvement of insulin sensitivity and blood pressure
  cell.com/cell-metabolism/pdfExtended/S1550-4131(18)302535
  ncbi.nlm.nih.gov/pubmed/20921964

- Reduces the feeling of hunger ncbi.nlm.nih.gov/pubmed/31339000

- Strengthens the immune system. ncbi.nlm.nih.gov/pubmed/31927066

- Promotes weight loss and the retention of muscle mass (requires being in a caloric deficit and sufficient muscle stimulation)

- It causes a slight increase in metabolism. ncbi.nlm.nih.gov/pubmed/10837292
  This increase is due in part to the secretion of norepinephrine and orexin ("The effects of diurnal intermittent fasting on the wake-promoting neurotransmitter orexin-A" archive.is/NPK2U
  It is an evolutionary adaptation (motivation to go hunting)

- Increased growth hormone secretion (not to be confused with IGF-1)
  archive.is/kUckK

- A prolonged fast or prolonged caloric deficit will slow down your metabolism.

- Avoiding the typical "detox" diets based on juices. These do not provide any benefit.

- Training when you are on fasting is not harmful, it is important to maintain good hydration.

- If you have never fasted it is better to adapt progressively.

- Promotes autophagy (cell recycling) ncbi.nlm.nih.gov/pubmed/21106691

  Autophagy is a natural mechanism of the body to prevent aging.
  "The role of autophagy in aging: its essential part in the anti-aging mechanism.."
  https://www.ncbi.nlm.nih.gov/pubmed/17934054

  It has the same effect at the brain level. "Short-term fasting induces profound neuronal autophagy." archive.is/e92r9

- Limits the growth of cancer cells
  "Modified alternate-day fasting regimens reduce cell proliferation rates to a similar extent as daily calorie restriction" ncbi.nlm.nih.gov/pubmed/18184721

  "Intermittent fasting from dawn to sunset for 30 consecutive days is associated with anticancer proteomic signature and upregulates key regulatory proteins of glucose and lipid metabolism, circadian clock, DNA repair, cytoskeleton remodeling, immune system and cognitive function in healthy subjects."
  ncbi.nlm.nih.gov/pubmed/31927066

The AMPK pathway (metabolic pathway) works in conjunction with the mTOR pathway, so that between the two they are responsible for regulating the energy balance in cells and the consumption of calories made, depending on the nutrients provided and the metabolic stress situations

The mTOR pathway is responsible for anabolism repair and new tissue construction, and the AMPK pathway for cell recycling and repair.

The mTOR pathway is responsible for synthesizing proteins and, in short, for promoting a large part of the processes of muscle hypertrophy. When the mTOR pathway acts, the AMPK pathway does not, and when it acts, the mTOR pathway does not. Therefore, it is highly recommended to reach a balance between both metabolic pathways to try to make the most of each one.

- In a volume phase we will try to gain as much muscle mass as we can by trying not to increase our body fat percentage excessively. It requires being in a caloric surplus.

- In the definition phase we will try to maintain maximum muscle mass (requires a stimulus> muscle training with weights that allow us to perform between 8 and 12 repetitions with good technique per series, no 1kg weights, also applies to women) while reducing our body fat rate. It requires being in a caloric deficit.

- Over time we will alternate between the 2 phases, trying to maintain our body fat percentage at hormonally healthy levels (12-18% in men and 18-25% in women).

    - Although it is a habit that has almost disappeared it was a usual thing to use all the parts of the animals, not just lean meat. This is especially known by carnivorous animals, which as it can be seen in nature always prioritize the organs of the animal before the lean meat, since it is in the organs where there is a higher concentration of nutrients.

- Replace refined salt for sea salt (forget about “Himalayan salt”, that’s not going to make miracles). The refined salt that is used in processed foods or that we find in bars and restaurants has undergone an industrial refining process that goes through very high temperatures that alter its structure and detract from its nutritional contents. In contrast, authentic sea salt has not been chemically treated and is natural: it is the consequence of the simple evaporation of seawater. Of course, 90% of its composition is naturally chlorine and sodium, but it contains a greater number of trace elements, minerals and iodine that are of great nutritional relevance to the body.

Suplementation

Si nuestras reservas de magnesio son bajas (cosa que es casi segura) no podremos lograr unos niveles correctos de vitamina D a pesar de que nos suplementemos con esta. Ya que para que nuestro cuerpo pueda sintetizar/absorber (en caso de que la tomemos como suplemento) la vitamina D consumirá parte de nuestras reservas. Sin reservas el mecanismo no puede funcionar.

- Magnesium: It is necessary to be able to synthesize / absorb D vitamin.

  If our magnesium reserves are low (which is highly probable) we will not be able to achieve correct levels of D vitamin even though we supplement with it. Since in order for our body to synthesize / absorb (in case we take it as a supplement), D vitamin will consume part of our reserves. Without reserves this mechanism cannot work.

  “Magnesium supplementation in D vitamin deficiency” archive.is/UyeW0

- D Vitamin: It is essential for the proper functioning of the immune system (activation of Lymphocytes)

- Calcium and vitamin K2: The bioavailability of calcium in foods such as (pasteurized) milk is greatly reduced due to the effects of this process on its structure.

  - In the “Milk study” carried out by Dr. Francis M. Pottenger Jr. The control group (cats) fed pasteurized milk suffered (the 3rd generation of the control group) degenerative diseases, greater number of allergies, the males became more docile and the females more aggressive (remember the importance of the endocrine system). The 4th generation of these left no legacy.

  - K2 Vitamin helps to fix calcium in the bones.

- Joints and tendons (injury prevention / facilitate recovery)

  - MSM, glucosamine HCL, chondroitin, hyaluronic acid, and type II collagen (hydrolyzed).

  It should be remembered that the joints and tendons tend to be injured much more frequently than the muscles (rapid recovery) since they have a much lower blood supply (and therefore a supply of nutrients) which hinders their recovery.

- Zinc: Together with D vitamin it helps us maintain healthy hormonal levels. Recommended dose of 15mg daily in both men and women.

Material

- Basic material
    - Rack/Power cage: Essential for safely performing multi-joint exercises (squats, bench press, military press, pull-ups and dips)
    - Olympic bar (2.2 meters long, disc diameter 50mm, weight 20kg.
    - Olympic bar blockers.
    - Olympic discs (diameter 50mm) the weights to be purchased will vary according to the level of the athlete.
    - Flat or reclining bench (important to check the maximum weight it supports)
- Very useful additional material
    - Weighted vest (30kg with removable 1kg metal weights)
    - Olympic Z bar to perform biceps curls with pronation / supination grip and other exercises such as the French press).
    - Hexagonal Olympic bar, which will allow us to perform deadlift with a balanced gravity axis (safer for the lower back). It is very handy for shoulder shrugs (trapeze), farmer's walk, and squats.
    - Wrist roller, very useful to improve our grip if we still cannot do pull-ups.
    - Rubber tiles (to protect the floor)
    - Gymnastic rings are unstable, this will force us to improve the stabilizing muscles.

Traning

- Always use weights that allow us to execute the exercises with a correct technique.
- Respect the recovery times of the large (72h) and small (48h) muscle groups.
- Perform series of 8 to 12 repetitions
- Apply the principle of load progression in training
- Stretching before training is overrated, it is more important to warm up well to keep your joints well lubricated.
- Maximum adaptive volume series (weekly): Quadriceps 12-18, Femoral 10-16, Gluteal 4-12, Chest 12-20, Back 16-22, Biceps 14-20, Triceps 10-14, Trapezius 12-20, Abs / core 16-20, Shoulders 16- 22 and calf muscles (full range heel raises)

- We are a ‘chain’ and we will break through the weakest part. We must strengthen our weak points to prevent injuries (wrists> forearm, knees> quadriceps, lumbar> core).
- Always maintain a correct technique, not allowing our ‘ego’ to load more the bar leads to injury.
- Seek a balanced development of the antagonistic muscles (biceps / triceps, anterior / posterior shoulder, pectoral / back, abdominal / lumbar, etc.) to avoid bad body postures / decompensations caused by postural retroversion.
- It is most effective to divide the weekly training volume into 2 or 3 sessions per muscle group (frequency).
- In case of injury once recovered, it will be easier for us to recover the previous level. This is due to muscle memory. As we progress in training, the nuclei of muscle cells increase through the recruitment of satellite cells, these nuclei will remain in the long term despite not training.

  “Muscle memory and a new cellular model for muscule atrophy and hypertrophy.” ncbi.nlm.nih.gov/pubmed/26792335

Frequency II routine (example)

Note: For this routine it is assumed that the user has the recommended material.

- Monday
  - Pull-ups 5-12s
  - Deadlift with 5-10s hexagonal Olympic barbell 5-10s
  - Hex Bar Shoulder Shrug / Chin Paddle with Z Bar 4-10s
  - Roll / unwind wrist roller (forearm) 2-3s
  - Planks 1’ (if we can do it without difficulties we will use the weighted vest) 1-5s

- Tuesday
  - Z bar biceps curl alternating pronation and supination grip 4-10s
  - Dips / french press (triceps) 3-7s
  - Heel lifts for calf muscles 4-8s (full range, no "bouncing", we don't want to hurt the achilles heel), this exercise can be weighted with the vest. We can carry them out on the first step of a ladder holding lightly with one hand on the railing.

- Wednesday
  - Military press + side raises (requires dumbbells) + face pull (face pull can be done with an elastic band tied to the rack) 4-11s
  - Bench press 5-10s
  - Planks 1’ 1-5s

- Thursday
  - Dips / french press 3-7s
  - Z bar biceps curl alternating pronation and supination grip 4-10s 4-10s
  - Heel lifts for calf muscles 4-8s

- Friday
  - Squats + one leg squats 4-12s
  - Deadlift with hexagonal Olympic bar 4-6s

- Saturday
  - Bench press 5-10s
  - Military press + side raises + face pull 4-11s
  - Hex Bar Shoulder Shrug / Chin Paddle with Z Bar 4-10s
  - Wrist roller 2-3s

Healthy habits / tips

- Sunbathe more: First of all forget the sunscreens, they do not protect against skin cancer, they only give us a false sense of security.

  Article: “Sunscreen does not protect against deadliest skin cancer - The Telegraph” archive.is/tteTo

  Sunscreens interfere with the body's ability to synthesize vitamin D and like many other "cosmetics" they act as endocrine disruptors, interfering with the proper functioning of our endocrine system.

  “Cosmetics as endocrine disruptors: are they a health risk?” archive.is/wSbwJ

  The risk of contracting melanoma is associated with a lack of vitamin D.

  There is also the added problem of potentially harmful sunscreen ingredients (Oxybenzone, Ocinaxate, Retinyl Palmitate which is used in many sunscreens, and which, when rancid due to excessive exposure to the sun, can cause skin tumors.)

  It is recommended to gradually increase sun exposure, so that our body develops the natural protection that is tanning. With 30-40 minutes the first days is more than enough, even less if you have very white skin.

  “Chronic sunscreen use decreases circulating concentrations of 25-hydroxyvitamin D.” archive.is/uJky9

- Avoid xenoestrogens or artificial estrogens. These are found in plastics, pesticides, cosmetics and many other elements that surround us in our daily life.

  - Use less plastics: Minimize the consumption of food packaged in plastic. And above all, do not microwave food in plastic containers. Use glass.

  - Use more natural personal hygiene products, which do not contain parabens.

  - Minimize exposure to pesticides, eat organic food when you can, and prioritize meat from animals that have not been treated with hormones or antibiotics.

    Note: Organic foods have higher nutritional values but not all are the same (it is not the same when they come from small producers than from large manufacturers that "comply" with the regulations to obtain the certificate.)

- Rest

  - Lack of sleep reduces our testosterone levels and increases cortisol (stress hormone, like all hormones is necessary and fulfills physiological functions but having this hormone elevated chronically is harmful)

- Fat accumulation
    - Testosterone plays a key role in the regulation of insulin and glucose. It is because of this that women tend to (and have to) have a higher percentage of body fat than men.
    - Fat can be considered an endocrine organ, and its excess in men causes them to produce more estrogens through aromatization, a process by which the enzyme aromatase converts testosterone into estrogen.

      “Estrogen production and action” ncbi.nlm.nih.gov/pubmed/11511861
- Weak bones
    - Testosterone strengthens bones, which is why women often have osteoporosis problems (and also the false belief that they must train without weight).
- Endocrine disruptors
    - Our estrogen receptors are extremely promiscuous, and host any substance similar to a natural estrogen. One of the most worrisome aspects is our love for plastics.
    - Components like Bisphenol A (also known as BPA) can be released into the contents of plastic containers and cause imbalances in our hormonal (endocrine) system.

      “Bisphenol-A induces neurodegeneration through disturbance of intracellular calcium homeostasis in human embryonic stem cells-derived cortical neurons.” ncbi.nlm.nih.gov/pubmed/31102917

      “Neurological Effects of Bisphenol A and its Analogues” ncbi.nlm.nih.gov/pmc/articles/PMC4661290/

      “Neuro-toxic and Reproductive Effects of BPA.” ncbi.nlm.nih.gov/pubmed/31362658

- Medications: Many medications, including statins (prescribed to lower cholesterol), have negative effects on testosterone levels.

  As budgets for health research are squandered looking for ways to treat diseases, instead of looking for what causes them and how to prevent them, progress will be very slow.

- Another component that has neurotoxic effects is Thimerosal. The culmination of research examining the effects of thimerosal in humans indicates that it is a poison at minute levels with a host of detrimental consequences.

  Studies:
    - "Lasting Neuropathological Changes in Rat Brain After Intermittent Neonatal Administration of Thimerosal” https://pubmed.ncbi.nlm.nih.gov/21225508/
    - “Thimerosal: Clinical, Epidemiologic and Biochemical Studies” https://pubmed.ncbi.nlm.nih.gov/25708367/

- Electronic devices (electrosmog)

  It is not recommended to carry the phone on in your pocket (near "the crown jewels").

  “Effects of electromagnetic fields of cellular phone on testosterone and progesterone hormones rate in Syrian Hamsters (Mesocricetus auratus)” archive.is/V68UA

  - The best place for a mobile is the outside pocket of a backpack, bag, wallet, etc. If you have no choice but to carry it in your pocket or on your belt, store the phone with the keyboard towards your body and the battery towards the outside, in an insulating case (RFID) and, if possible, as far from the genitals as you can.

  - Never allow children to use wireless or mobile phones, except for emergencies. If you want your child to say hello to someone on the phone or whatever, make it a normal landline. https://i.imgur.com/19XzBm2.png

  - Children's increased sensitivity to electromagnetic radiation is due to the narrow width of the cranial bones, four times thinner than that of an adult.

  - Do not use microwaves, it degrades the nutritional quality of the food.

    “Effects of Microwave Heating on the Loss of Vitamin B(12) in Foods.” ncbi.nlm.nih.gov/pubmed/10554220

  - Electric blankets. Dr. Nancy Wertheimer and Ed Leeper of the University of Colorado studied the effects of electric blankets in depth in a study ("Possible Effects of Electric Blankets and Heated Water Beds on Fetal Development", Bioelectromagnetics, Vol. 7) of 1986. They concluded that the use of electric blankets by women was related to a higher incidence of genetic defects in their children, pregnancy problems and childhood leukemia. The electromagnetic fields produced by electric blankets penetrate between 14 and 18 cm in the human body.

    “Possible Effects of Electric Blankets and Heated Waterbeds on Fetal Development” https://pubmed.ncbi.nlm.nih.gov/3729998/

  - Hair dryers. They produce a 50 mG field 15 cm away, more than enough to increase the risk of tumors and genetic damage, both in those who use them and in the fetus in the case of pregnant women. An abnormally high incidence rate of breast cancer has been observed in hairdressers for a long time. This is due to frequent and prolonged use of tumble dryers near the chest.

  There are people who, for reasons of profession or their interest in their health (especially people who suffer from electro-sensitivity), take the problem of electromagnetic fields very seriously. So much so that the most varied EMF clothing is made, made with insulating materials such as this hairdressing gown (https://i.imgur.com/Sg7gQBi.png)

- Effects of estrogenization
    - Overtaking of puberty in girls
    - As puberty advances, the age of aging also advances (just as the previous point is due to an acceleration of the physiological cycle of women)
    - Delayed puberty in boys
    - Physical and psychological feminization of men
    - Irregularities in the menstrual cycle
    - Infertility in both sexes
- Preventive measures
    - Consuming untreated water: The chlorine used to "make the water drinkable" and the remnants of medicines that reach the wastewater (chlorine cannot eliminate them) have estrogenic effects and in the long run can cause infertility.

      News related:

        - “OECD warns of 'feminization' of fish by traces of oral contraceptives in water” archive.is/Aicxs
        - “More male fish 'feminized' by pollution on the Basque coast” archive.is/DRorw y archive.is/PtQQl
    - Conserve / package the water in glass containers (demijohns, glass bottles, etc.)
    - Avoid ultra-processed and packaged foods, especially "artificial" garbage such as risketos, bollycaos, and other plasticized garbage. Buy real food.
    - Do not consume carbonated drinks or their ‘light’ versions. They are the same garbage with more artificial sweeteners to supply the lack of sugar.
    - For women: Avoid tampons. The artificial substances they contain (not only estrogens, but other carcinogenic elements) easily penetrate the thin layers of the vaginal walls, affecting the entire organism, and are one of the (recognized) causes of cervical cancer. Use compresses instead.
    - For children: Avoid plastic toys.
    - For women: Avoid oral contraceptives as they pass into the urine and, ultimately, into rivers and seas. They also ruin the female hormonal balance.
    - Avoid drugs. All of them have a more or less estrogenic effect, especially synthetic ones and those derived from cannabis.
    - Avoid medications as much as possible.

    - Avoid alcohol, especially in high doses.

    - Eating plenty of fiber, especially plant products, and not abusing cereals (and their derivatives. Anyone who likes to eat bread slices and is not willing to give up this habit will be pleased to know that toasting the bread slice intensively (without burning it) Helps to break down starches, transforming them into simple sugars of greater bioavailability. It is preferable that the bread is whole grain. archive.is/Fqdzu

- Foods that fight estrogenization

    - Cruciferous vegetables (broccoli, cauliflower, cabbage)..

    - Citrus fruits (oranges, tangerines, lemons).

      Note: If possible it is better to consume the whole fruit than in juices (more progressive release of its natural sugar called fructose)

    - Pure honey (without additives / processed)

    - Chamomile and passion flower (also present in tea).

    - Onion and garlic. Remarkable the powerful cleansing and detoxifying effects of garlic, a highly recommended food, at least one clove a day.

    - Green tea, another notable food for its beneficial qualities. Like all food, I recommend taking it warm or something hot, without burning.

    - Leafy green leaves, such as spinach or lettuce.

    - Red fruits, such as raspberry, blackberry, strawberry, blueberry, goji berry, blackberry, and generally wild berries.

    - Extra virgin olive oil. Without frying.

    - Fatty wild fish (blue fish) such as salmon, sardines, trout or shortfin mako.

- Nuts and seeds, for example, pecans, almonds, cashews and pumpkin seeds, the latter notable for their beneficial effects on the prostate.

Important note about cereals and nuts:

Cereals are still seeds, and a seed needs some acidity, moisture, darkness, some heat and time to germinate. To avoid germination until finding the ideal environment, the seeds have antinutrients (such as phytic acid, irritating tannins that reduce the bioavailability of iron and copper, sugars that are too complex to be broken down, gliadin, etc.) and enzyme inhibitors sensitive to acidity and humidity. Until these antinutrients are "deactivated" and the seed germinates releasing its enzymes, the raw grain will be a little nutritious product for most living beings. Cooking it solves the problem only partially. Earlier we have seen that phytic acid blocks the absorption of numerous minerals from the intestinal tract, enzyme inhibitors require the pancreas to release additional enzymes, leaving it depleted. These antinutrients really are part of the seed's self-preservation system.

To prepare the seeds, we must imitate the process that takes place spontaneously in Nature. We provide a warm, somewhat acidic, dark and humid environment to "trick" the seed and force it to germinate. The environment we will create will contain enzymes (such as phytase) and beneficial bacteria (such as lactobacilli), which will act to neutralize antinutrients, increase the content of vitamins (especially group B), and break down complex substances (tannins, gluten, complex sugars) and others) in others that are simpler and more bioavailable. Technically, we will be carrying out a pre-digestion of the product, as do many granivorous animals that have several stomachs for this purpose.

The process is simple. Put the seeds (for example, brown rice, raw almonds, lentils or oat flakes) in a container and add twice the volume of warm water. Then we add an acidity and fermentation catalyst, such as apple cider vinegar, butter or lemon juice, to obtain the necessary acidic environment. Cover and store the container to keep the seeds in the dark, and leave it overnight. The next morning we empty the water, clean with additional water and then drain. We will notice substantial changes, for example the raw almonds will have acquired a bright and luminous tone, they will have become crisp and tender, and many of them will be split in half. The rice, after being drained, will be ready to be cooked, and its nutritional profile and digestibility will have greatly improved.

This process was followed in practically every traditional society that used grains for food. In England, oat flakes were "soaked" overnight before preparing porridge the next day. Elsewhere, the flour dough was raised and left for a long time to ensure fermentation. Most of these beneficial systems of preparation ceased to be practiced when the rise of commercial civilization and the "hustle and bustle of modern life" deprived them of practicality, regarding them as almost superstition.

In Weston A. Price's book "Nutrition and Physical Degeneration" he studied the "primitive" cultures of the world. At that time there were many groups of people who were not exposed to Western civilization. Those who were not exposed to the "western" diet had broad, manly faces and wide dental arches with well-aligned, cavity-free teeth.

In the intestinal tract, phytic acid (one of several cereal antinutrients) combines with magnesium, calcium, copper, iron, and especially zinc, blocking its absorption. This, in addition to involving hormonal imbalances and the attenuation of virilization (zinc is extremely important for the hormonal health of men), means that the skeleton does not absorb the nutrients it needs, and grows with little density and width. A poorly mineralized skeleton implies a narrower face. A narrower face implies a narrower jaw, and a narrower jaw involves crowded and messy teeth, as well as problems with wisdom teeth. So a diet high in cereal grains can lead to mineral deficiency, brittle bones, and osteoporosis, in addition to iron deficiency anemia. If we add to this a lack of vitamins A and D due to the absence of foods rich in saturated animal fats, we obtain truly fragile and practically poorly developed beings.

It is for something that ruminants, such as cows, goats, sheep, antelopes, and buffalo, have four stomachs to help them digest food.

Within a single anatomical structure there are four compartments: the reticulum, the rumen, the omasum and the abomasum. Each of them fulfills a particular function to complete the digestive process.

The action of the 4 compartments allows them to extract specific nutrients from grasses, hay, grass and other vegetables rich in cellulose. Species within this category have evolved over the years to be able to adapt, feed and thus subsist in landscapes such as prairies, where this type of food abounds.

    - Some spices, such as oregano, thyme, rosemary, and ginger.

- Foods rich in pro-estrogens (to avoid)

    - Licorice, spearmint (peppermint), fried foods, soybeans and derivatives, beer and other alcoholic beverages, sweets and other "goodies".

    - Tap water, especially in big cities like Barcelona (and many others).

- Bone broth, a very nutritious food

    - It requires non-meaty bones, a slow cooker (or crock pot), and apple cider vinegar (unpasteurized).

    - It is recommended to cook the bones 45 minutes in the oven previously.

    - It is a food of great nutritional value (very rich in calcium). It requires 48 hours of cooking in the case of using beef bones.

    - If the bones have marrow, eat it.

- Reasons to avoid long distance running (or minimize it)
    - Aerobics is oxidative as it uses oxygen dependent metabolic pathways.
    - Lower testosterone, with all that this implies.
      Less libido, less muscle and a higher proportion of body fat.
    - Reduces growth hormone (greater difficulty in regenerating tissues).
    - It increases hormones related to stress such as cortisol.
    - It causes greater joint degradation.

    A simple comparison between the physique of a marathoner and a sprinter speaks by itself.
    https://i.imgur.com/wjzps3S.png

    The sprinter exercises all the possibilities of the leg much better in its entire course, while the long-distance runner concentrates on eroding the knee joint in a very limited range of motion. Both athletes sacrifice and suffer, both have merit, but one is a versatile and off-road evolutionary wonder, the other is not.

    The anaerobic word itself means "living without air." The anaerobic mode, therefore, represents a metabolic way of obtaining energy without using oxygen.

From an evolutionary point of view a European hunter-gatherer had no evolutionary or survival reason to run marathons, although he probably walked a great deal and was adept at fighting, crawling, jumping, climbing, javelin and stone throwing, and handling the spear, tomahawk, knife, mace, bow and shield, with specially prepared neuromuscular kinetic chains for the grip and fluid handling of bladed weapons. Analysis of paleolithic skeletons has revealed that their injury charts were those of a modern American rodeo rider or football player: people approaching a "very personal" distance from wild, large, and dangerous animals (including humans), performs and suffers rapid movements of great violence. With all due respect to the sacrifice of an athlete and to the spirit of suffering of the great long distance runners: in the needs of real life, the marathon was a rarity.

The marathon was born in Greece to announce the news of victory in a battle against the Persians. The first marathon runner died exhausted as soon as he accomplished his mission. The sports practiced by the Greeks were hunting, discus and javelin throwing, Greco-Roman wrestling, boxing, pancracy, rowing, jumping and sprinting. To be an Athenian citizen, you had to pass a series of physical tests, none of which was a long distance race.

Roman legionaries did not practice continuous running, but rather discus and javelin throwing, boxing and Greco-Roman wrestling. They marched many kilometers with weight on their backs and handled the spear, the sword and the shield (see "Mario's Mules").

- Reduce our exposure to blue light emitted by some devices such as mobile phone screens, computers, televisions, especially during the hours (1-2h) before going to sleep.

- Exposure to the cold in a timely manner causes an activation of brown fat or brown fat tissue. This fat, unlike the white and visceral fat, helps us generate body heat, increases our mentabolism by having a higher caloric intake and stimulates our immune system. Chronic exposure to cold is something to avoid.

    - People who swim frequently in cold waters have more white blood cells and monocytes.

      "Adaptation related to cytokines in man: effects of regular swimming in ice-cold water." archive.is/qc9lm
      "Immune system of cold-exposed and cold-adapted humans" archive.is/Rw3QM

      My personal recommendation: take a bath in nature whenever you can, obviously in rivers or lakes where there are no spills following the channel. When we get out of the water we should wrap up quickly and try not shiver (neither during the bath nor when leaving the water).

      To help us maintain body temperature we can use neoprene gloves and booties and try not to wear our hair too short (a lot of body heat is lost through the head).

      Getting warm before bathing can also help reduce the feeling of cold.
      We must gradually progress. It starts out in uncomfortable but tolerable temperatures without getting to the point of shivering. Maintaining a calm breath as if we were meditating or praying is also effective.

      Three immersions in fresh water a week for 6 weeks (one hour at 14ºC) increased the number of cells of the immune system, as well as exposure to environmental cold: 4-5ºC for 1-2 hours
      "Activation of NK cells in subjects exposed to mild hyper- or hypothermic load." ncbi.nlm.nih.gov/pubmed/2457640

      Phytoncides are volatile substances released by plants and trees, which are absorbed through the olfactory system and produce an immediate reduction of stress hormones, in turn raising the blood concentration of killer cells or NK (from the English Natural Killer), a type of white blood cell that prevents infections and attacks cancer cells.

      Reports:

        - "A day trip to a forest park increases human natural killer activity and the expression of anti-cancer proteins in male and female subjects." archive.is/ycSTV archive.is/U0Xly

        - Effect of forest bathing trips on human immune function archive.is/jiTFR

        - Effect of phytoncide from trees on human natural killer cell function. ncbi.nlm.nih.gov/pubmed/20074458

During our "dives" our breathing should be nasal and in general also since in the nose, unlike the mouth, all the particles that are harmful to our larynx and trachea filter.

At birth we cannot shiver, since babies have a large amount of brown fat that protects them from the cold. We lose part of this fat as we grow, but if we never expose ourselves to the cold, the loss will be much greater, increasing the risk of obesity. archive.is/YtqU5

“Recruited brown adipose tissue as an antiobesity agent in humans”
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3726164/

Cold reduces inflammation and increases the body's antioxidant capacity. Generally speaking this is good, but not necessarily after training (or injury).

In this report (“Cold-water immersion blunts and delays increases in circulating testosterone and cytokines post-resistance exercise.” archive.is/ZsyZA), subjects who submerged in cold water after training (10 minutes at 10ºC), gained less muscle mass than the others. Other studies confirm this lower adaptation. (archive.is/wip/MlaIy), This is because the cold accelerates recovery, reducing the time our body has to generate new adaptations. Being interesting for example during a competition that requires facing different events in a short time. Showering in cold water is a much lower stimulus than immersing yourself in ice water for ten minutes, which is what they do in studies.

- Free feet: Health and postural improvement

The sole of the foot has a higher density of nerve endings than any other area of the body, offering the same sensory richness as the hands.

And what do we do with these sophisticated gifts from nature? Lock them up. Condemn them to isolation cells. The oldest known sandals are around 5,000 years old. They offered protection, but did not alter our basic movement pattern.

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0010984

This is what almost all footwear was like for the last few thousand years, until Nike altered the course of our feet in the 1970s. It convinced us that our natural biomechanics were unsuitable for sports. The era of damping was born. Inner tubes and several centimeters of heel became the norm. Our way of running changed and, therefore, our anatomy.

- Deform your feet and lose functionality

More than a hundred years ago, Dr. Philip Hoffman photographed feet in societies that had never known footwear. The fingers were spread apart, offering a stable base of support. And he compared them to feet that had worn footwear all their lives.

Not all damage is repairable, but your feet can regain some of their natural structure and functionality. Dr. Nick published on his page the changes of a patient after two years of minimalist footwear. Over time, the fingers can regain some of their natural shape and separation.

The problems derived from current footwear is much greater than suffering deformations in the toes. The muscles of the feet are atrophied, the natural arch is weakened, and the fascia becomes stiffer.

Reports:

- “Women's musculoskeletal foot conditions exacerbated by shoe wear: an imaging perspective.” ncbi.nlm.nih.gov/pubmed/21731927

- "The effect of minimal shoes on arch structure and intrinsic foot muscle strength” sciencedirect.com/science/article/pii/S2095254614000374

High-heeled shoes shorten the Achilles tendon, the strongest and thickest in the body. Our Achilles tendon was one of the evolutionary adaptations that allowed us to go from herbivores to hunters, giving rise to our advanced brain. This large tendon stores elastic energy, propelling you with every stride and reducing energy expenditure.
Report: archive.is/ZoGvx

Something similar occurs with the arch of the foot. It is our natural cushioning system. A dock with a dozen ligaments and four layers of muscle. Placing an external support under this arch interferes with its operation, and it weakens over time, contributing to the high prevalence of flat feet.

Report: ncbi.nlm.nih.gov/pubmed/7706341

- Worsen your posture

The heel of the shoe carries the weight of the body towards the toes, causing a cascade of compensations upwards: rotated pelvis, lumbar hyperextension, front neck ... Spending hours sitting increases the problem, but it all starts with the feet.

“The effect of walking in high- and low-heeled shoes on erector spinae activity and pelvis kinematics during gait.” ncbi.nlm.nih.gov/pubmed/22311060

It modifies the natural way of walking (study) and the structure of the fingers

“Long-term use of high-heeled shoes alters the neuromechanics of human walking.” ncbi.nlm.nih.gov/pubmed/22241055

“Women's musculoskeletal foot conditions exacerbated by shoe wear: an imaging perspective.” http://archive.is/p08Zo

“Implications of high-heeled shoes on body posture of adolescents.” ncbi.nlm.nih.gov/pubmed/23828066

- Increased risk of injury

Worse stability and posture increase your risk of injury in any activity. But they are not the only problem.

The weakness of the bridge, your natural cushioning, together with a short and loaded Achilles tendon, put great stress on the fascia, which ends up becoming inflamed, leading to plantar fasciitis. Study: “Running shoes increase achilles tendon load in walking: an acoustic propagation study.” ncbi.nlm.nih.gov/pubmed/24500535

The "solution" of many experts is the same as always, treating the symptom. Add more support and protection, relieving short-term symptoms, but further weakening the foot.

Risk is magnified by running. 70-90% of runners are injured (study, study), despite all the “advances” of footwear in recent decades. Any species released with these running injury rates would have been extinct long ago.

Studies: “Epidemiology and aetiology of marathon running injuries.” ncbi.nlm.nih.gov/pubmed/17465629

“Foot strike and injury rates in endurance runners: a retrospective study.” ncbi.nlm.nih.gov/pubmed/22217561

Spending more money analyzing your footprint to select running shoes doesn't reduce injuries, either, and may even increase risk. Studies:

“The effect of three different levels of footwear stability on pain outcomes in women runners: a randomised control trial.” ncbi.nlm.nih.gov/pubmed/20584759

“Is your prescription of distance running shoes evidence-based?” ncbi.nlm.nih.gov/pubmed/18424485

"Injury reduction effectiveness of assigning running shoes based on plantar shape in Marine Corps basic training." ncbi.nlm.nih.gov/pubmed/20576837

If you fear the impact on your social life of going barefoot on the street, do not suffer. It is not necessary to go to that extreme. It is not about avoiding footwear, but choosing it better. There are more and more options, for all tastes and occasions.

The simple fact of walking more with minimalist footwear strengthens your feet.

Any minimalist shoe should adhere to these basic rules:

Flexibility: It should not limit foot movement in any direction.

Wide toe: does not compress the fingers.

Without cushioning: thin sole, which protects but allows you to feel the terrain.

Minimum «drop»: it is known as drop to the elevation of the heel, or unevenness between the heel and the metatarsus. Normal shoes have a 1-2 cm drop, while the ideal would be zero.

The Vibram FiveFinger could be considered the quintessential minimalist shoe.

- Every day we go to the toilet, it is a discreet and simple act with many more implications than we think.

    - It may seem unseemly, but squatters take less time going to the bathroom and are healthier. What happens is that the sitting position on the toilet places our rectal canal at a 90 degree angle. That causes a muscle in the pelvic floor to constrict the colon, forcing us to strain to evacuate.

    - To do this it is as simple as putting your feet on a stool that allows us to maintain a position more similar to a "squat".

    - Squatting relaxes the puborectalis muscle that normally closes the rectum to maintain continence. It is an effective, non-invasive treatment for hemorrhoids, as evidenced by clinical research publications.

    Reports:

    "Comparison of straining during defecation in three positions: results and implications for human health." ncbi.nlm.nih.gov/pubmed/12870773

    "Influence of Body Position on Defecation in Humans." ncbi.nlm.nih.gov/pubmed/26676214

    "A review on squat-assist devices to aid elderly with lower limb difficulties in toileting to tackle constipation. ncbi.nlm.nih.gov/pubmed/30898031

- Avoid pornography and masturbation
    - Pornography has many negative psychological and physiological effects. This alters and impairs the functioning of the endocrine system.
    - Overload dopamine receptors by being exposed to this type of content. “Sensation-seeking: dopaminergic modulation and risk for psycopathlogy” archive.is/B6uJb
    - It causes a considerable increase in prolactin, which results in lack of motivation “Orgasm-induced prolactin secretion: feedback control of sexual drive?” ncbi.nlm.nih.gov/pubmed/11835982
    - May cause hypo-frontality (impairs memory and is associated with ADHD, bipolarity, and depression). Reports:
        - “Pornographic picture processing interferes with working memory performance” archive.is/82sdo
        - “Sexual arousal decreases the functional synchronization between cortical areas in young men” archive.is/PE5Sc
    - It can cause considerable brain damage (loss of gray matter). Report: “Brain structure and functional connectivity associated with pornography consumption: the brain on porn.” ncbi.nlm.nih.gov/pubmed/24871202
    - Cravings stronger than drug addicts (methamphetamine). ncbi.nlm.nih.gov/pubmed/29725310
    - Masturbation reduces your testosterone levels.

      Testosterone levels take 7 days to regain previous levels and begin to stabilize. Men who abstain for 3 weeks have higher base levels. archive.is/bF8Xn
    - Men currently have less testosterone than the previous generation. i.imgur.com/5ETVgdB.jpg
    - Multiple studies have shown that addicts to this content need more of it to obtain the same effects (dopamine)

      Report: “Is internet pornography causing sexual disfunctions? A review with clinical reports.” ncbi.nlm.nih.gov/pmc/articles/PMC5039517

- Avoid veganism and vegetarianism (associated problems and medical reasons)
    - The vegan diet implies a vitamin B12 deficiency.
      Study: “German vegan study: diet, life-style factors, and cardiovascular risk profile” https://pubmed.ncbi.nlm.nih.gov/16219987/
    - Diets high in fiber imply a reduction in the plasma half-life of Vitamin D
      Study: “Reduced plasma half-life of radio-labeled 25-hydroxyvitamin D3 in subjects receiving a high-fiber diet” https://pubmed.ncbi.nlm.nih.gov/6299329/
    - Vegans have weaker bones due to lower calcium intake and low vitamin D3 levels:

      Studies: "Low Bone Mass in Subjects on a Long-term Raw Vegetarian Diet" https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/486478

      “The influence of vegan diet on bone mineral density and biochemical bone turnover markers” https://pubmed.ncbi.nlm.nih.gov/21092700/
    - Vegans have poorer memory compared to non-vegans due to creatine deficiency in vegans. Studies:

      “Oral creatine monohydrate supplementation improves brain performance: a double-blind, placebo-controlled, cross-over trial” https://pubmed.ncbi.nlm.nih.gov/14561278/

      “The influence of creatine supplementation on the cognitive functioning of vegetarians and omnivores” https://pubmed.ncbi.nlm.nih.gov/21118604/
    - Vegans suffer from omega 3 deficit. Studies:

      “Eicosapentaenoic and docosapentaenoic acids are the principal products of alpha-linolenic acid metabolism in young men” https://pubmed.ncbi.nlm.nih.gov/12323085/

      “Conversion of alpha-linolenic acid to eicosapentaenoic, docosapentaenoic and docosahexaenoic acids in young women” https://pubmed.ncbi.nlm.nih.gov/12323090/

      “Conversion of alpha-linolenic acid to longer-chain polyunsaturated fatty acids in human adults” https://pubmed.ncbi.nlm.nih.gov/16188209/

      “Long-chain n-3 polyunsaturated fatty acids in plasma in British meat-eating, vegetarian, and vegan men” https://pubmed.ncbi.nlm.nih.gov/16087975/
    - Vegans suffer from carnitine deficiency. Studies:

      “Vegetarians have a reduced skeletal muscle carnitine transport capacity” https://pubmed.ncbi.nlm.nih.gov/21753065/

      “Carnitine status of lactoovovegetarians and strict vegetarian adults and children” https://pubmed.ncbi.nlm.nih.gov/2756917/

      “Systemic carnitine deficiency exacerbated by a strict vegetarian diet.” https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1628441/

“Correlation of carnitine levels to methionine and lysine intake”
https://pubmed.ncbi.nlm.nih.gov/11043928/

- Vegans are deficient in taurine. Study:
"Plasma and urine taurine levels in vegans” https://pubmed.ncbi.nlm.nih.gov/3354491/

- Vegetarians and vegans have iodine deficiency. This deficiency can inhibit brain development in a fetus. Studies:

  “Iodine deficiency in vegetarians and vegans”
  https://pubmed.ncbi.nlm.nih.gov/12748410/

  “Iodine status and thyroid function of Boston-area vegetarians and vegans”
  https://pubmed.ncbi.nlm.nih.gov/21613354/

- The vegetarian diet is associated with a deficiency of coenzyme Q10. Study:
“Effect on absorption and oxidative stress of different oral Coenzyme Q10 dosages and intake strategy in healthy men” https://pubmed.ncbi.nlm.nih.gov/16873950/

- Vegans are deficient in iron due to the fact that the iron present in vegetables has less bioavailability than the iron present in meat:

  Study: “Dietary reference intakes: vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc”
  https://pubmed.ncbi.nlm.nih.gov/11269606/

  https://ods.od.nih.gov/factsheets/Iron-HealthProfessional/

- Vegans suffer from vitamin A deficiency. Studies:

  “Two common single nucleotide polymorphisms in the gene encoding beta-carotene 15,15'-monoxygenase alter beta-carotene metabolism in female volunteers”
  https://pubmed.ncbi.nlm.nih.gov/19103647/

  “Variability in conversion of β-carotene to vitamin A in men as measured by using a double-tracer study design” https://academic.oup.com/ajcn/article/75/5/900/4689405

  “Estimation of carotenoid accessibility from carrots determined by an in vitro digestion method” https://pubmed.ncbi.nlm.nih.gov/12001013/

  “UK women at risk from vitamin A deficiency”
  https://www.sciencedaily.com/releases/2009/11/091118072051.htm

  “Two common single nucleotide polymorphisms in the gene encoding β-carotene 15,15′-monoxygenase alter β-carotene metabolism in female volunteers”
  https://faseb.onlinelibrary.wiley.com/doi/full/10.1096/fj.08-121962

  “Vitamin A, Weston A. Price Foundation”
  https://www.westonaprice.org/health-topics/abcs-of-nutrition/vitamin-a-vagary/
  https://www.westonaprice.org/health-topics/abcs-of-nutrition/vitamin-a-saga/

- Vegans have a lower sperm count. Studies:

  “Some observations on human semen analysis” https://pubmed.ncbi.nlm.nih.gov/35465/

  “The Role of Soy in Vegetarian Diets” ncbi.nlm.nih.gov/pmc/articles/PMC3257705/

- Vegans and vegetarians have the lowest testosterone. Studies:

  “Serum sex hormones and endurance performance after a lacto-ovo vegetarian and a mixed diet” https://pubmed.ncbi.nlm.nih.gov/1435181/

  “Effect of a vegetarian diet and dexamethasone on plasma prolactin, testosterone and dehydroepiandrosterone in men and women” https://pubmed.ncbi.nlm.nih.gov/159772/

- Veganism causes loss of libido and erectile dysfunction
  “Hypogonadism and erectile dysfunction associated with soy product consumption” https://pubmed.ncbi.nlm.nih.gov/21353476/

- Children raised on strict vegan diets do not thrive. Studies:

  “Food consumption and height/weight status of Dutch preschool children on alternative diets” https://pubmed.ncbi.nlm.nih.gov/4067152/

  “Effects of macrobiotic diets on linear growth in infants and children until 10 years of age” https://pubmed.ncbi.nlm.nih.gov/8005079/

- Children develop rickets after prolonged periods of strict vegetarian diets. Study:
  “Nutritional rickets in vegetarian children”
  https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1874810/pdf/canmedaj01383-0052.pdf

- Vitamin B12 and folate deficiency have detrimental effects on children's brain development. Study: “Effects of vitamin B12 and folate deficiency on brain development in children” https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3137939/

- The following are case studies. Cerebral atrophy in a vitamin B12 deficient infant from a vegetarian mother: “Cerebral atrophy in a vitamin B12-deficient infant of a vegetarian mother” https://pubmed.ncbi.nlm.nih.gov/25076673/

- Severe megaloblastic anemia in a child breastfed by a vegetarian mother: “Severe megaloblastic anemia in child breast fed by a vegetarian mother”
  https://pubmed.ncbi.nlm.nih.gov/8442642/

- Consequences of a diet exclusively limited to breastfeeding by a vegan mother:
  “Consequences of exclusive breast-feeding in vegan mother newborn - case report”
  https://pubmed.ncbi.nlm.nih.gov/19748244/

- A 7-month-old girl presented with acute anemia, generalized muscle hypotonia, and poor growth. Laboratory evaluation revealed cobalamin deficiency, due to the mother's vegan diet: “Floppy baby with macrocytic anemia and vegan mother”
  https://pubmed.ncbi.nlm.nih.gov/18293883/

- The most recent studies using more sensitive techniques to detect B12 deficiency have found that 68% of vegetarians and 83% of vegans are B12 deficient, compared to only 5% of omnivores.

  Studies: “Vitamin B-12 status, particularly holotranscobalamin II and methylmalonic acid concentrations, and hyperhomocysteinemia in vegetarians” https://pubmed.ncbi.nlm.nih.gov/12816782/

  “Signs of impaired cognitive function in adolescents with marginal cobalamin status” https://pubmed.ncbi.nlm.nih.gov/10966896/

  “Pseudovitamin B(12) is the predominant cobamide of an algal health food, spirulina tablets” https://pubmed.ncbi.nlm.nih.gov/10552882/

- Vegetarians and omnivores have similar levels of serum iron, but levels of ferritin, the long-term form of iron storage, are lower in vegetarians than in omnivores. Study: “Is iron and zinc nutrition a concern for vegetarian infants and young children in industrialized countries?” https://pubmed.ncbi.nlm.nih.gov/24871479/

- The following is significant because depletion of ferritin is the first stage of iron deficiency. Although vegetarians often have an iron intake similar to that of omnivores on paper (in theory), it is more common for vegetarians (and particularly vegans) to be iron deficient. For example, this study of 75 vegan women in Germany found that 40% of them were iron deficient, despite the fact that their average iron intake was above the recommended daily allowance.

  Study: “Dietary iron intake and iron status of German female vegans: results of the German vegan study” https://pubmed.ncbi.nlm.nih.gov/14988640/

Spanish version: https://drive.google.com/file/d/1ST4-9Yn52z-2IF-e65nzeyhmaDgI8rmo/view?usp=sharing